



United States Department of the Interior

BUREAU OF MINES

TWIN CITIES RESEARCH CENTER
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MINNEAPOLIS, MINNESOTA 55417

January 26, 1983

Confidential Claim Retracted

Authorized by: SC

Date: 6/25/13
6/25/14

Mr. Marc E. Nelson
Jackpile-Paguate EIS Task Force Leader
Bureau of Land Management
South Central Region
505 Marquette Avenue NW, Suite 815
Albuquerque, New Mexico 87102



Dear Mr. Nelson:

I have received Lewis Oriard's report on "Seismic Effects of Blasting Operations of Anaconda Minerals Company on the Village of Paguate, New Mexico," and found it to be a very thorough, professional job. He presents a considerable amount of information which casts doubt on the occurrence of blasting damage in the village of Paguate.

From the data presented, it is impossible to determine whether Oriard used state-of-the-art technical procedures to calculate particle velocity from the displacement/frequency data obtained from the Sprengnether records. Also it was not obvious how he determined the velocity levels on the "near side of village" and "far side of village" from the four values on page 6. However, considering Oriard's excellent technical and personal credentials, I assume that he utilized the appropriate techniques.

Because of my lack of first-hand knowledge of this situation, it is difficult for me to determine whether a further investigation by the Department of Interior is warranted. However, I will say that Oriard's report would be very difficult to refute on technical grounds.

Unfortunately, airblast was not measured at the site. Airblast is a major cause of complaints although it seldom has been shown to cause damage. Measurement of airblast, plus reporting of the ground vibration frequencies, would have been helpful in assessing the potential for damage. Based on the data presented, I agree with Oriard that damage was unlikely.



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Letter to Mr. Marc Nelson, Bureau of Land Management, Albuquerque, New Mexico
Subj: Lewis Oriard's report on "Seismic Effects of Blasting Operations of
Anaconda Minerals Company on the Village Paguete, New Mexico"

On page 7, Oriard infers incorrectly that the OSM regulations were promulgated partly to reduce human annoyance. Damage was the only factor considered in setting the 1.0 ips limit. On page 20 Oriard also infers that there is little new data in RI 8507. Actually, RI 8507 probably contains the largest amount of new field-measured damage data ever collected in a single study. Oriard's comparisons of earthquake vibrations and vibrations induced by every day activities such as walking, jumping, and traffic, as compared with the measured blasting vibrations, are strong arguments that blasting was not the likely cause of most of the cracking in the buildings. The relative frequency of damage to structures not subjected to blasting vibrations also supports this contention.

Sincerely,

Richard A. Dick

RICHARD A. DICK

cc: B. Johnson, WO
(through P. G. Meikle)
D. D'Andrea, TCRC
D. Siskind, TCRC